CONSTRUCTION AND SAFETY

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SAFETY REGULATIONS, PROGRAMS AND PRECAUTIONS RELATED TO ALL WORK ON THIS PROJECT.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF PERSONS AND PROPERTY EITHER ON OR ADJACENT TO THE PROJECT AND SHALL PROTECT SAME AGAINST INJURY, DAMAGE OR LOSS.
3. MEANS AND METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIALS ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL NECESSARY ITEMS (SLEEVES, EXTRA REINFORCEMENT, HANGARS, RAISED PADS, STEPPED FOOTINGS ETC.) TO PROVIDE THE REQUIRED DISTRIBUTION OF ELECTRICAL AND MECHANICAL UTILITIES THROUGHOUT THE STRUCTURE. THE LOCATIONS, SIZES, ELEVATIONS OR EXISTENCE OF THESE ITEMS MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DRAWINGS OF OTHER DISCIPLINES FOR THE SIZES AND LOCATIONS, AND THE STANDARD STRUCTURAL DETAILS AND NOTES FOR ANY ADDITIONAL REINFORCEMENT (AS REQUIRED).
5. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE DRAWINGS OF OTHER CONSULTANTS AND TRADES. THE CONTRACTOR SHALL COORDINATE THE VARIOUS REQUIREMENTS.
6. ANY EMBEDS, PITS, OR RECESSES REQUIRED BY OTHER TRADES OR VENDORS SHALL BE NOTED BY THE CONTRACTOR FROM TRADE OR VENDOR DRAWINGS. REQUIREMENTS OF THESE TRADE OR VENDOR DRAWINGS FOR A COMPLETED INSTALLATION MAY NOT BE NOTED ON THESE DRAWINGS, BUT SHALL BE INCLUDED IN THE WORK.
7. ANY FLOOR DEPRESSION DIMENSIONS WHICH ARE REQUIRED SHALL BE CONFIRMED BY THE CONTRACTOR AS MEETING THE INTENT OF THE ARCHITECTURAL DRAWINGS.
8. THE ACTUAL LOCATIONS OF EXISTING UNDERGROUND OR OVERHEAD UTILITIES AND LINES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL WALL AND DOOR OPENINGS. REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS FOR DUCTS, PIPING CONDUITS, ETC. NOT SHOWN.
10. ALL ELEVATIONS ARE REFERENCED FROM FIRST FLOOR FINISHED ELEVATION.
11. ANY DISCREPANCIES, INTERFERENCE, OR CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND THOSE OF OTHER DISCIPLINES SHALL BE REPORTED PRIOR TO THE SUBMISSION OF CHECKED SHOP DRAWINGS BY THE CONTRACTOR FOR REVIEW.
12. NO OPENINGS NOR ANY CHANGES IN SIZE, DIMENSION OR LOCATION SHALL BE MADE IN ANY STRUCTURAL ELEMENTS WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
13. OPENINGS 1'-0" OR LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO DRAWINGS OF OTHER CONSULTANTS FOR SUCH OPENINGS.
14. FIREPROOFING OF STRUCTURAL ELEMENTS IS NOT SHOWN ON THE STRUCTURAL DRAWINGS. 12 REFER TO THE SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR FIRE RATING REQUIREMENTS, MATERIALS AND METHODS.
15. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED ON THE STRUCTURE. SUCH LOADS SHALL NOT EXCEED THE CAPACITY OF THE STRUCTURE AT ANY TIME.
16. SAFE AND ADEQUATE SHORING OF ALL PARTS OF THE STRUCTURE, DURING THE COURSE OF CONSTRUCTION, SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
17. THE DESIGN OF THE PARTS AND PORTIONS OF THE STRUCTURE IS BASED ON A COMPLETED CONDITION. ANY TEMPORARY BRACING, SHORING OR SUPPORTING OF THE STRUCTURE OR ITS PARTS WHICH IS MADE NECESSARY DUE TO CONSTRUCTION SEQUENCING (OR OTHERWISE) TO MAINTAIN STABILITY PRIOR TO COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
18. THE CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER, CLEARLY AND EXPLICITLY IN WRITING, OF ANY DEVIATION OR SUBSTITUTION OF REQUIREMENTS OF THE CONTRACT DOCUMENTS. CONTRACTOR IS NOT RELIEVED OF ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS BY VIRTUE OF THE STRUCTURAL ENGINEER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS CLEARLY AND EXPLICITLY INFORMED THE STRUCTURAL ENGINEER IN WRITING OF ANY DEVIATIONS OR SUBSTITUTIONS AT TIME OF SUBMISSION, AND THE STRUCTURAL ENGINEER HAS GIVEN WRITTEN APPROVAL FOR THE SPECIFIC DEVIATIONS OR SUBSTITUTIONS.
19. ALL THINGS WHICH, IN THE OPINION OF THE CONTRACTOR, APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS OR AMBIGUITIES IN THE DRAWINGS OR SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER. CORRECTIONS OR WRITTEN INTERPRETATIONS SHALL BE ISSUED BEFORE AFFECTED WORK MAY PROCEED.
20. IF THE CONTRACTOR CANNOT CONSTRUCT ANY PORTION OF THE WORK IDENTIFIED IN THE DRAWINGS IN ACCORDANCE WITH THESE DRAWINGS AND SPECIFICATIONS, THEN THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH THE WORK. WORK THAT DOES NOT COMPLY WITH THE DRAWINGS MAY REQUIRE REMOVAL, TESTING, OR ENGINEERING EVALUATION AT THE CONTRACTOR'S EXPENSE.
21. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SITE CONDITIONS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.
22. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH NEW WORK IN AREAS AFFECTED BY EXISTING CONDITIONS. STRUCTURAL ENGINEER SHALL BE INFORMED IN WRITING OF CONFLICTS BETWEEN EXISTING AND PROPOSED NEW CONSTRUCTION.
23. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DIMENSIONS SHOWN ON THE CONTRACT DOCUMENTS. INCONSISTENCIES ON THE STRUCTURAL DRAWINGS OR BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER CONTRACT, SHOP, FABRICATION, OR OTHER DRAWINGS OR INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH AFFECTED WORK.
24. DO NOT SCALE THESE DRAWINGS, USE THE DIMENSIONS SHOWN.
25. CONTRACTOR SHALL PROVIDE IN HIS SCHEDULE FOR A SHOP DRAWING REVIEW AND RETURN TIME OF A MINIMUM OF FIFTEEN (15) WORKING DAYS IN THE STRUCTURAL ENGINEER'S OFFICE.
26. ALL ANCHOR BOLTS SHALL BE SET WITH TEMPLATES IN ACCORDANCE WITH BUILDING MANUFACTURER'S REQUIREMENTS AND PLACEMENT DRAWINGS.
27. VERIFY ELEVATOR PIT DIMENSIONS, LOCATIONS, LOADS AND DETAILS WITH THE ELEVATOR SUPPLIER PRIOR TO THE FABRICATION AND/OR INSTALLATION OF ANY MATERIAL.
28. ALL SECTIONS AND DETAILS ARE TYPICAL AT SIMILAR LOCATIONS AND WHERE APPLICABLE.
29. ONCE THE PROJECT IS COMPLETED, THE OWNER SHALL BE RESPONSIBLE FOR ADEQUATE STRUCTURAL MAINTENANCE. THE CONTRACTOR IS REQUIRED TO INFORM THE OWNER OF THIS IN WRITING.

CODES AND STANDARDS

1. INTERNATIONAL BUILDING CODE 2003 EDITION INCLUDING ALL SUBSEQUENT SUPPLEMENTS AND AMENDMENTS THERETO.
2. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", AMERICAN SOCIETY OF CIVIL ENGINEERS, ASCE 7-02.
3. "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS", AMERICAN INSTITUTE OF STEEL CONSTRUCTION, JUNE 1, 1989 AS AMENDED IN SPECIFICATIONS.
4. ALLOWABLE STRESS DESIGN (NINTH EDITION) AMERICAN INSTITUTE OF STEEL CONSTRUCTION, 1999. .5. "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS", AMERICAN INSTITUTE OF STEEL CONSTRUCTION, APRIL 15, 1997 AND SUPPLEMENTS THERETO.
5. "STRUCTURAL WELDING CODE - STEEL (AWS D1.1)" AND "STRUCTURAL WELDING CODE REINFORCING STEEL (AWS D1.4)", AMERICAN WELDING SOCIETY.
6. "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-99)", AMERICAN CONCRETE INSTITUTE 1999 AND ALL SUCCEEDING REVISIONS.
7. "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-99) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1-99), AMERICAN CONCRETE INSTITUTE 1999.
8. "MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE, LATEST EDITION.
9. "DESIGN MANUAL FOR FLOOR DECKS AND ROOF DECKS", STEEL DECK INSTITUTE.
10. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", AMERICAN IRON AND STEEL INSTITUTE (AISI), 1996 EDITION.

DESIGN CRITERIA

1. DESIGN LOADS:
   A) LIVE LOADS
      I) GROUND FLOOR . . . 100 PSF
      II) 2ND FLOOR . . . 80 PSF
      IV) ROOF . . . . 20 PSF (AS PER IBC)
   B) ROOF LOADS
      I) ROOF SNOW LOAD . . 5 PSF (INCLUDING RAIN ON SNOW LOAD)
      II) ROOF UPLIFT . . . 42 PSF ENDZONE (AS PER IBC, 2003)
      . . . 35 PSF INTERIOR ZONE (AS PER IBC, 2003)
   C) WALL LOADS
      COMPONENTS & CLADDING . 49 PSF ENDZONE (AS PER IBC, 2003)
      . . . 44 PSF INTERIOR ZONE (AS PER IBC, 2003)
2. WIND CRITERIA:
   A) WIND . . . . . 130 MPH
   B) WIND BASE SHEAR . . . 112 KIPS
   C) ENCLOSURE CRITERIA . . ENCLOSED
   D) WIND EXPOSURE CATAGORY . B
3. SEISMIC CRITERIA:
   SEISMIC HAZARD EXPOSURE GROUP I
   SEISMIC DESIGN CATAGORY D
   Ss= 1.36 g
   S1= 0.40 g
   RESPONSE MODIFICATION FACTOR "R" = 4.5
   SITE CLASSIFICATION = SITE CLASS E
   ANALYSIS METHOD - EQUIVALENT LATERAL FORCE
   BASE SHEAR = 415 KIPS
4. REINFORCEMENT:
   A) Fy = 60,000 PSI
5. WELDED WIRE FABRIC - ASTM185
6. SOIL BEARING PRESSURE = 2000 PSF

FOUNDATIONS

1. TOP OF FOOTING ELEVATIONS ARE SHOWN ON THE DRAWINGS OR ARE TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD IN ACCORDANCE WITH THE GUIDELINES SET FORTH IN THE DRAWINGS.
2. ENGINEERED FILL:
   ALL FILL MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. MATERIAL SHALL BE A CLEAN, LOW PLASTIC SOIL WITH A PLASTICITY INDEX LESS THAN 30 (LESS THAN 15 IS PREFERRED), LIQUID LIMIT LESS THAN 50, UNIT WEIGHT OF 120 PCF, AND SHALL NOT CONTAIN MORE THAN 5 % BY WEIGHT OF FIBROUS ORGANIC MATERIALS. ALL FILL MATERIAL SHALL BE SELECT MATERIAL CAPABLE OF ATTAINING 95 % MAXIMUM DRY DENSITY COMPACTION. COMPACTED FILL MATERIAL SHALL BE FREE OF STONES, ROCKS, BROKEN BRICKS, WOOD FRAGMENTS, OR OTHER DELETERIOUS MATERIAL THAT AFFECTS THE COMPATIBILITY OF THE MATERIAL.
3. COMPACTION:
   ALL FILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS AND COMPACTED TO A MINIMUM OF 95 % STANDARD PROCTOR (ASTM D-698) EXCEPT THAT THE TOP 18 INCHES UNDER FOUNDATIONS AND THE BUILDING PAD SHALL BE COMPACTED TO A MINIMUM OF 100 % STANDARD PROCTOR. MOISTURE SHALL BE CONTROLLED TO WITHIN 3% ABOVE OR BELOW OPTIMUM CONTENT.
4. MODULUS OF SUBGRADE REACTION FOR SLABS ON GRADE: 200 PCI
5. THE EXPOSED SOIL SURFACE AFTER EXCAVATION SHALL BE COMPACTED A MINIMUM OF 95% OF THEIR STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 TO A DEPTH OF 8".
6. ALL EXCAVATIONS FOR FOOTINGS SHALL BE MADE TO THE GRADES SHOWN FOR CONTINUOUS FOOTINGS. CONTRACTOR SHALL TAKE MEASURES AS TO PREVENT CAVE-IN OF THE FOOTING EXCAVATIONS AS MAY BE REQUIRED.
7. PRIOR TO PLACEMENT OF ANY CONCRETE, THE THIN LAYER OF DISTURBED SOIL IN THE FOOTING SUBGRADE SHALL BE COMPACTED WITH HAND OPERATED, GAS POWER TAMPERS
8. FOUNDATION AND RETAINING WALLS SHALL HAVE A MINIMUM OF TWO FEET (2'-0") OF FREE DRAINING GRANULAR FILL AGAINST THE BACK OF THE WALL OR SHALL HAVE AN ACCEPTABLE COMMERCIAL GRADE OF DRAINAGE MAT PLACED AGAINST THE BACK OF THE WALL.
9. FOUNDATION WALLS RETAINING EARTH SHALL BE BRACED AGAINST BACKFILL PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE. BACKFILLING IS STRICTLY PROHIBITED UNTIL SLABS ARE IN PLACE.
10. FOUNDATION WALLS OR GRADE BEAMS HAVING EARTH PLACED ON EACH SIDE SHALL HAVE BOTH FILLED SIMULTANEOUSLY TO MAINTAIN A COMMON ELEVATION.
11. REINFORCING IN ALL CONTINUOUS STRIP FOOTINGS SHALL HAVE CORNER BARS OR DOWELS PROVIDED AT ALL CORNERS AND INTERSECTIONS.
12. IF UNDERPINNING OF EXISTING FOUNDATIONS ADJACENT TO THE NEW CONSTRUCTION WILL BE REQUIRED, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SUCH WORK AND FOR PROVIDING FOR THE ADEQUACY AND PERMANENT SUPPORT FOR ALL EXISTING BUILDINGS. CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER REGISTERED IN SOUTH CAROLINA TO DESIGN AND DETAIL ALL UNDERPINNING WORK BASED ON CONDITIONS UNCOVERED AND DOCUMENTED IN THE FIELD. CALCULATIONS AND DRAWINGS FOR ALL UNDERPINNING WORK, SIGNED AND SEALED BY THE CONTRACTOR'S ENGINEER, SHALL BE SUBMITTED TO THE ARCHITECT FOR RECORD ONLY.

WINDOWS

1. CONTRACTOR TO ADVISE BUILDING OFFICIAL, AT TIME OF PERMITTING, CONCERNING WINDOW TYPES, I.E., UNPROTECTED GLAZING, IMPACT RESISTANT WINDOWS, SHUTTERED WINDOWS, BOARDED WINDOWS, MECHANICAL SHUTTERED WINDOW OR OTHER TYPE PROTECTED WINDOW.
2. THE WIND LOADING CRITERIA FOR SUBJECT PROJECT IS BASED ON 130 MPH (3 SECOND GUST) PER ASCE 7-02 CODE REQUIREMENTS.
3. THIS STRUCTURES ENCLOSURES CLASSIFICATION, BASED ON THE GLAZED OPENINGS HAS BEEN CLASSIFIED AS AN ENCLOSURE STRUCTURE. THE GLAZED OPENINGS HAVE BEEN CONSIDERED AS UNPROTECTED GLAZING. ASCE 7-02 SECTION 6.5.9.3
   EXCEPTIONS:
   IN CATEGORY II & III BUILDINGS (OTHER THAN HEALTH CARE, JAIL, AND DETENTION FACILITIES, POWER GENERATING AND OTHER PUBLIC UTILITY FACILITIES), UNPROTECTED GLAZING SHALL BE PERMITTED, PROVIDED THAT UNPROTECTED GLAZING THAT RECEIVES POSITIVE EXTERNAL PRESSURE IS ASSUMED TO BE AN OPENING IN DETERMINING THE BUILDINGS' ENCLOSURE CLASSIFICATION.

CONCRETE

1. CONCRETE SHALL HAVE 28-DAY COMPRESSIVE STRENGTHS AND DENSITIES AS FOLLOWS:

ELEMENT/MEMBER	STRENGTH F'C	DENSITY WC
FOOTINGS & SLABS ON GRADE	3 KSI	145 PCF
CAST-IN-PLACE WALLS	4 KSI	145 PCF
SLABS ON STEEL DECK	3 KSI	115 PCF
STAIR PAN FILL	3 KSI	115 PCF
ALL OTHER CONCRETE U.N.O.	4 KSI	145 PCF

2. CONCRETE MIX DESIGNS:
   A. SUBMITTALS: SUBMIT WRITTEN REPORTS OF EACH PROPOSED CONCRETE MIX NOT LESS THAN 15 DAYS PRIOR TO THE START OF WORK. DESIGN MIXES PREPARED MORE THAN TWELVE (12) MONTHS PRIOR TO THE DATE OF THE SUBMITTAL ARE NOT PERMITTED.
   B. MIX DESIGNS, INCLUDING W/C RATIOS AND SLUMPS, SHALL BE PREPARED IN ACCORDANCE WITH THE MOST CURRENT ACI 301 CHAPTER 3, EXCEPT WHERE NOTED OTHERWISE IN THE PROJECT SPECIFICATIONS. CEMENT SHALL CONFORM TO ASTM C 150 TYPE I OR AT CONTRACTOR'S OPTION, ASTM C 595 TYPE IP WHERE FLY ASH IS PERMITTED IN ACCORDANCE WITH THE SPECIFICATIONS. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C 33 AND LIGHT WEIGHT AGGREGATE SHALL CONFORM TO ASTM C 330. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED IN ANY CONCRETE.
   C. AGGREGATE SIZES SHALL BE:

FORMED CONCRETE ELEMENTS, U.N.O.	#67 STONE (3/4" MAX.)
GRADE SLABS AND EARTH FORMED ELEMENTS	#57 STONE (1" MAX.)
LIGHTWEIGHT CONCRETE ELEMENTS	3/8" MAX. DIMENSION
COARSE MASONRY GROUT PER SECTION 04230	#8 STONE (3/8" MAX.)
FINE MASONRY GROUT PER SECTION 04230	#4 STONE (3/16" MAX.)

   D. WATER REDUCING ADMIXTURE SHALL BE USED IN ALL CONCRETE.
   E. AIR ENTRAINING ADMIXTURE IN ACCORDANCE WITH ACI 301-84 TABLE 3.4.1. SHALL BE USED IN ALL CONCRETE EXPOSED TO FREEZING AND THAWING DURING CONSTRUCTION OR SERVICE CONDITIONS.
   F. WATER/CEMENT RATIO SHALL NOT EXCEED 0.50 FOR ANY CONCRETE SUBJECTED TO FREEZING/THAWING.
   G. ALL PUMPED CONCRETE SHALL HAVE A WATER/CEMENT RATIO LESS THAN 0.50 AND SHALL CONTAIN A HIGH RANGE WATER REDUCING ADMIXTURE (SUPERPLASTICIZER).
   H. IN NO CASE SHALL A WATER/CEMENT RATIOS EXCEED THE FOLLOWING:
      F'C 3000 PSI 0.60 MAX. W/C RATIO
      F'C 4000 PSI 0.50 MAX. W/C RATIO
3. CURING:
   A. LIQUID MEMBRANE CURING COMPOUND WITH A MINIMUM 30 % SOLIDS CONTENT SHALL BE APPLIED WITHIN TWO (2) HOURS AFTER COMPLETION OF FINISHING TO ALL CONCRETE FLATWORK AND WALLS, U.N.O., OTHER THAN FOOTINGS AND GRADE BEAMS.
   B. FLOORS IN AREAS RECEIVING QUARRY TILE, CERAMIC TILE AND LIQUID FLOOR HARDENER SHALL BE CURED WITH SPECIFIED DISSIPATING LIQUID MEMBRANE CURING COMPOUND OR WET CURED BY USE OF MOISTURE RETAINING COVER. DISSIPATING CURING COMPOUND SHALL BE THOROUGHLY BROOMED AND WASHED OFF PRIOR TO APPLICATION OF FLOOR FINISH.
4. WHERE USE IS DESIRED, SUBMIT FOR ENGINEER'S APPROVAL A NON-CORROSIVE, NON-CHLORIDE, ACCELERATING ADMIXTURE FOR CONCRETE EXPOSED TO TEMPERATURES BELOW 40 DEGREES. UNIFORMLY HEAT WATER AND AGGREGATES TO A TEMPERATURE OF NOT LESS THAN 50 DEGREES. PLACE AND CURE CONCRETE IN ACCORDANCE WITH ACI 306 "COLD WEATHER CONCRETING".
5. WHEN HOT WEATHER CONDITIONS EXIST, PLACE AND CURE CONCRETE IN ACCORDANCE WITH ACI 305 "HOT WEATHER CONCRETING". COOL MATERIALS BEFORE MIXING TO MAINTAIN CONCRETE PLACEMENT TEMPERATURE BELOW 90 DEGREES.
6. ALL CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS SHALL BE INCORPORATED INTO THE STRUCTURE UNLESS THE STRUCTURAL ENGINEER APPROVES THEIR ELIMINATION.
7. ADDITIONAL CONSTRUCTION JOINTS, REQUIRED TO FACILITATE CONSTRUCTION, ARE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND MAY REQUIRE ADDITIONAL REINFORCING. SUCH JOINTS SHALL BE CLEARLY DETAILED ON THE SHOP DRAWINGS AND ALL REINFORCING SHALL PASS CONTINUOUSLY THROUGH THE JOINT.
8. REINFORCING IN ALL ABUTTING CONCRETE, INCLUDING FOOTINGS, SHALL BE CONTINUOUS THROUGH OR AROUND ALL CORNERS OR INTERSECTIONS. DOWELS OR SPLICES SHALL BE EQUAL IN SIZE AND SPACING TO THE REINFORCING IN THE ABUTTING MEMBERS.
9. REFER TO ARCHITECTURAL DRAWINGS FOR DOOR AND WINDOW OPENINGS, DRIPS, REGLETS, WASHES, MASONRY ANCHORS, BRICK LEDGE ELEVATIONS, SLAB DEPRESSIONS AND MISCELLANEOUS EMBEDDED PLATES, BOLTS, ANCHORS, ANGLES, ETC.
10. REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES. WHERE FINISH IS NOT SPECIFIED, CONFORM TO REQUIREMENTS OF ACI 301.
11. REFER TO PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR UNDERFLOOR, PERIMETER AND OTHER DRAINS AND FOR SLEEVES, OUTLET BOXES, CONDUIT, ANCHORS, ETC. THE VARIOUS TRADES ARE RESPONSIBLE FOR THEIR ITEMS.
12. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES AND OTHER STEEL EXPOSED TO EARTH OR GRANULAR FILL SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.
13. FILL SLABS, NOT SHOWN ON THE STRUCTURAL DRAWINGS, SHALL BE REINFORCED WITH A MINIMUM OF 6X6-W1.4XW1.4 WWM UNLESS NOTED OTHERWISE ON OTHER DRAWINGS OR IN THE SPECIFICATIONS.
14. SLABS ON STEEL DECK SHALL BE PLACED SO THE FINISH SURFACE IS SCREEDED TO WITHIN 1/4" OF THE TOP OF SLAB (T.O.SLAB) ELEVATION SHOWN ON THE DRAWINGS. SCREED SUPPORTS SHALL BE PLACED OVER OR IMMEDIATELY ADJACENT TO BEAM OR GIRDER LINES SCREED SUPPORTS SHALL NOT BE LOCATED ON DECK SPANNING BETWEEN BEAMS OR GIRDERS.
15. FINISHING TOLERANCE SHALL BE WITHIN CLASS B IN ACCORDANCE WITH ACI 301 AND CONSIDERATION SHALL BE GIVEN TO SEQUENCING OF CONCRETE PLACEMENT TO FACILITATE CONTROL OF FINISH ELEVATIONS.
16. GROUT:
   A. GROUT BELOW STRUCTURAL STEEL BASE PLATES SHALL BE NON-SHRINK GROUT WITH A MINIMUM STRENGTH OF 6000 PSI WHEN BEARING ON 3000 PSI CONCRETE OR LESS, A STRENGTH OF 8000 PSI WHEN BEARING ON CONCRETE BETWEEN 3000 AND 4000 PSI, AND, UNLESS NOTED OTHERWISE ON THE DRAWINGS, A STRENGTH OF 8000 PSI WHEN BEARING ON CONCRETE GREATER THAN 4000 PSI.
   B. NON-SHRINK GROUT SHALL BE PRE-MIXED, NON-CORROSIVE, NON-METALLIC, NON-STAINING CONTAINING SILICA SANDS, PORTLAND CEMENT, SHRINKAGE COMPENSATING AND WATER REDUCING AGENTS. PRODUCT SHALL ONLY REQUIRE THE ADDITION OF WATER. MINIMUM COMPRESSIVE STRENGTH SHALL BE 2500 PSI AFTER ONE DAY AND 6000 PSI AFTER 28 DAYS. GROUT SHALL BE FREE OF GAS PRODUCING OR AIR RELEASING AND OXIDIZING AGENTS AND CONTAIN NO CORROSIVE IRON, ALUMINUM OR GYPSUM.
17. PROVIDE CONCRETE GROUT - NOT MORTAR - FOR REINFORCED MASONRY LINTEL AND BOND BEAMS WHERE INDICATED ON DRAWINGS OR AS SCHEDULED.
18. TOLERANCE FOR ANCHOR BOLTS AND OTHER EMBEDDED ITEMS SHALL BE PER THE AISC CODE OF STANDARD PRACTICE SECTION 7.5.
19. UNLESS OTHERWISE SHOWN IN THE ARCHITECTURAL DRAWINGS, PROVIDE 3/4" CHAMFERS AT ALL COLUMN, WALL, SLAB OR BEAM EDGES THAT ARE EXPOSED TO VIEW IN THE FINISHED STRUCTURE.

REINFORCING STEEL

1. REINFORCING SHALL BE DOMESTIC NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60 OR 60S INCLUDING STIRRUPS AND TIES, EXCEPT THAT REINFORCING WHICH IS REQUIRED TO BE WELDED SHALL CONFORM TO ASTM A706.
2. FIELD BENDING OF CONCRETE REINFORCING STEEL IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
3. WELDED WIRE MAT SHALL CONFORM TO ASTM A184 AND FABRIC TO ASTM A185.
4. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI SP-66 "ACI DETAILING MANUAL - 1994" AND THE "CRSI MANUAL OF STANDARD PRACTICE", LATEST EDITION.
5. MINIMUM CONCRETE COVER OVER REINFORCING SHALL BE U.N.O.:
   A. UNFORMED SURFACE CAST AGAINST EARTH 3 IN.
   B. FORMED SURFACE EXPOSED TO EARTH/WEATHER 2 IN.
   C. FORMED SLABS AND WALLS NOT EXPOSED TO EARTH/WEATHER USING MAX. #5 BAR 3/4 IN.
   D. ALL OTHER FORMED ELEMENTS NOT EXPOSED TO EARTH/WEATHER 1 1/2 IN.
6. DEVELOPMENT LENGTHS AND LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318-99 CHAPTER 12 AS INDICATED BELOW AND AS INDICATED ON THE DRAWINGS. WHERE SPLICES ARE NOT CALLED OUT ON THE DRAWINGS, USE CLASS "B". THE BASIC DEVELOPMENT LENGTH(S), SHOWN IN INCHES IN PARAGRAPH "A" BELOW, SHALL BE MULTIPLIED BY THE FACTORS IN PARAGRAPH "B" AS INDICATED FOR TENSION OR COMPRESSION AND THEN ROUNDED UP TO THE NEAREST WHOLE INCH. THE FACTORS INDICATED BELOW ARE CUMULATIVE ACROSS ALL OF THE APPLICABLE CONDITIONS.
   BASIC DEVELOPMENT LENGTHS ARE NOTED AS "N" FOR NOMINAL TENSION DEVELOPMENT, "T" FOR TOP BAR TENSION DEVELOPMENT, AND "C" FOR COMPRESSION DEVELOPMENT.
   A. REINFORCING FY = 60 KSI

F'C PSI	LDB	#3	#4	#5	#6	#7	#8	#9	#10	#11
	N	17	22	28	33	48	55	62	70	78
3000	T	22	29	36	43	63	72	81	91	101
	C	9	11	14	17	20	22	25	28	31

F'C PSI	LDB	#3	#4	#5	#6	#7	#8	#9	#10	#11
	N	14	19	24	29	42	48	54	61	67
4000	T	19	25	31	37	54	62	70	79	87
	C	8	10	12	15	17	19	22	24	27

   B. DEVELOPMENT LENGTH MULTIPLIERS: MULTIPLICATION FACTORS APPLY TO THE BASIC "LD" INDICATED ABOVE AND ARE CUMULATIVE OVER EACH OF THE REQUIREMENTS NOTED BELOW.
      I. COMPRESSION: ENCLOSURE WITHIN SPIRALS, TIES, OR STIRRUPS PER ACI 12.3.3.2 BUT NOT LESS THAN 8". .75
      II. TENSION: CLEAR SPACING < 2 DB OUTSIDE STIRRUPS 1.5
      III. TENSION: CLEAR SPACING OR COVER < 1 DB INSIDE STIRRUPS. 1.5
      IV. TENSION: CLASS "B" SPLICE REQUIREMENT. 1.3
      V. TENSION: BARS IN LIGHTWEIGHT AGGREGATE CONCRETE. 1.3
7. A CLASS "B" SPLICE IS REQUIRED WHEREVER ALL REINFORCING BARS CROSSING A SECTION ARE SPLICED.
8. REINFORCING BARS SHALL BE WELDED ONLY WHERE SHOWN ON THE STRUCTURAL DRAWINGS AND WELDS SHALL BE IN ACCORDANCE WITH THE "STRUCTURAL WELDING CODE - REINFORCING STEEL" (AWS D1.4). NO OTHER REINFORCING MAY BE WELDED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. TACK WELDING OF ANY REINFORCING IS STRICTLY PROHIBITED.
9. WELDED WIRE MAT/FABRIC SHALL BE LAPPED 1'-0" AT ALL SPLICES.
10. ALL REINFORCING TERMINATING AT THE TOPS OF COLUMNS AND PILASTERS SHALL BE HOOKED, U.N.O.
11. SUBMIT SHOP DRAWINGS FOR FABRICATION, BENDING, AND PLACEMENT OF CONCRETE REINFORCEMENT. COMPLY WITH ACI DETAILING MANUAL (SP-66) SHOWING BAR SCHEDULES, STIRRUP SPACING, DIAGRAMS OF BENT BARS, ARRANGEMENT OF CONCRETE REINFORCEMENT. INCLUDE SPECIAL REINFORCEMENT REQUIRED AT OPENINGS THROUGH CONCRETE STRUCTURES. INCLUDE ALL ACCESSORIES SPECIFIED/REQUIRED TO SUPPORT REINFORCING.
12. SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMISSION AND SHALL BEAR THE CONTRACTOR'S APPROVAL STAMP ACCEPTING RESPONSIBILITY FOR DIMENSIONS, QUANTITIES AND COORDINATION WITH THE OTHER TRADES.
13. SUBMIT TWO (2) PRINTS OF EACH SHOP DRAWING FOR REVIEW. SEE PROJECT SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.
14. CONTRACTOR SHALL PROVIDE IN HIS SCHEDULE FOR A SHOP DRAWING REVIEW AND RETURN TIME OF A MINIMUM OF FIFTEEN (15) WORKING DAYS IN THE STRUCTURAL ENGINEER'S OFFICE.
15. CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ALL CONCRETE POURS IN ORDER TO PERMIT REINFORCING STEEL REVIEW IF REQUIRED BY THE STRUCTURAL ENGINEER.

COMPOSITE BEAMS

1. COMPOSITE BEAMS AND GIRDERS DO NOT REQUIRE TEMPORARY SHORING FOR CONSTRUCTION LOADS (WET CONCRETE + 20 PSF) U.N.O. ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR LIMITING THE CONSTRUCTION LOAD IMPOSED ON THE STRUCTURE. WHERE QUESTIONS AS TO CAPACITY ARISE, CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
2. THE NUMBER OF SHEAR CONNECTORS (STUDS) SHOWN IS BASED UPON OBTAINING THE FULL HORIZONTAL SHEAR CAPACITY INDICATED IN THE AISC "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STEEL BUILDINGS" (LRFD) CHAPTER "I" FOR EACH STUD FOR THE STRENGTH AND DENSITY OF CONCRETE WHERE USED. SEE COMPOSITE STEEL DECK NOTES ALSO.
3. STUDS SHALL BE 3/4" DIAMETER AND SHALL EXTEND NOT LESS THAN 1-1/2" ABOVE THE TOP OF THE STEEL DECK AND SHALL NOT HAVE LESS THAN 1/2" CONCRETE COVER ABOVE TOP OF STUD AFTER WELDING AND SHALL CONFORM TO ASTM A108.
4. THE NUMBER OF STUDS ON A BEAM OR BETWEEN ANY TWO CONNECTIONS ALONG A BEAM IS SHOWN ON THE DRAWINGS. SPACING OF STUDS WITHIN THE LENGTH SHOWN SHALL BE AS UNIFORM AS POSSIBLE.
5. NO SHOP PAINT SHALL BE APPLIED TO ANY STUDS NOR TO TOP FLANGES OR SURFACES OF MEMBERS RECEIVING FIELD WELDED STUDS.
6. STUD TYPE, LENGTH, SHEAR VALUE AND DETAILED LAYOUT SHALL BE SUBMITTED WITH THE COMPOSITE METAL DECK SHOP DRAWINGS.
7. BREAK CERAMIC FERRULES (ARC SHIELDS) LOOSE AND REMOVE FROM DECK.
8. A STUD SHEAR CONNECTOR WELDED THROUGH THE METAL DECK MAY TAKE THE PLACE OF A 3/4" PLUG WELD IN ORDER TO SECURE THE DECK TO THE STEEL FRAMING. DO NOT WELD SHEAR CONNECTORS THROUGH TWO LAYERS (LAPPED ENDS) OF DECK UNITS.

CONSTRUCTION SET ONLY

CURRY ENGINEERS, LLC.
STRUCTURAL ENGINEERING
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CURRY ENGINEERS

SOUTH CAROLINA CURRY ENGINEERS, LLC. No. C02848 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 21964 PAUL A. CURRY

OFFICES AT BELLE HALL
BUILDING ONE
MT. PLEASANT, S.C.

REVISIONS:
4 CONST. SET 04.25.06 PAC

GENERAL NOTES

DRAWN BY:	J. BOYD
DESIGNED BY:	P. CURRY
CHECKED BY:	P. CURRY
DATE:	01.06.06
SCALE:	AS NOTED
JOB NO.:	25134
SHEET:	S-1